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ABSTRACT

Evaluated was the impact of computer based resource units on teacher decision making and the teaching/learning process by analysis of 18 doctoral dissertations, a 1969 analysis of teacher reactions, and a continuing analysis of evaluation forms returned by teachers using the units (intended for normal and handicapped children). Among the findings of the evaluation process were that the resource guides help teachers individualize instruction and result in increased planning time and more efficient teaching time. Suggested was the development of a computer based resource unit as an inservice or preservice teacher training experience. Summarized were the responses given in the evaluation forms received from October, 1970, to July, 1971. A bibliography lists 18 research studies, 12 related articles, and two books. For related documents see EC 051 238 through EC 051 240. (DB)

ED 073589

RESEARCH AND EVALUATION

OF

COMPUTER-BASED RESOURCE UNITS

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EC 051 241

Professional Studies Research and Development Complex
State University College at Buffalo
1300 Elmwood Avenue
Buffalo, New York 14222

1972

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The attempts to evaluate the impact of Computer-Based Resource Units on teacher decision making and the teaching/learning process have been continuous and to a great extent positive in their results. Evaluation strategies have taken three forms:

1. Approximately 18 doctoral dissertations have been compiled under the direction of the staff of the Faculty of Educational Studies, State University of New York at Buffalo (see bibliography). All of these studies, wholly or in part, address themselves to the relative effectiveness of the Computer-Based Resource Unit concept as a viable means for planning strategies which will lead to the individualization of instruction.

   Copies of each dissertation are available on microfilm and can be purchased from University Microfilm, P.O. Box 1346, Ann Arbor, Michigan 48106.

2. In 1969, a comprehensive analysis of the reactions of teachers who developed and/or utilized Computer-Based Resource Units was conducted in cooperation with the Board of Cooperative Educational Services (BOCES), First Supervisory District, Erie County, New York, and exists in the form of a 160 page document entitled, "Computer-Based Curriculum Planning". It is available through the Center for Curriculum Planning, Foster Hall, State University of New York at Buffalo.

3. Studies presently being conducted at the Professional Studies Research and Development Complex, State University College at Buffalo are concerned with a compilation of the current reactions and suggestions given by teachers who have utilized units which

were requested from this institution (see Appendix A). The data for these studies are retrieved from evaluation forms which are sent to teacher users. Since each Computer-Based Resource Guide which is disseminated from the Research and Development Complex will have affixed to it an evaluation form (see Appendix B), it is anticipated that this mode of evaluation will be continuous.*

In general, the findings of these studies indicate that use of Computer-Based Resource Guides:

--helps teachers individualize instruction

--results in increased planning time and more efficient teaching time

--causes teachers to be more aware of differences in students with corresponding in teaching behavior.

--makes teachers more aware of varied teaching methods

--results in an increase (not statistically significant) in informational recall, critical thinking, comprehension and peripheral knowledge

--facilitates the teacher's ability to construct a teaching unit

--results in greater provision for small group and individual activity

--usually results in improved student attitude toward the unit topic being studied

--provides more opportunity for student input and participation in planning classroom strategies

Additional information indicates that the actual experience of developing a Computer-Based Resource Unit is, in itself, an extremely effective in-service activity** since it requires that participating teachers develop skills in writing instructional objectives, activities and measuring devices; as well

*This evaluation form,serves a dual purpose: 1) it will provide continuous user feedback related to the effectiveness of Computer-Based Resource Units, and 2) it will afford teacher-users the opportunity to recommend additions or deletions of content, materials, activities and measuring devices, to modify and improve the textual content of a particular unit.

**A study conducted at the State University College at Buffalo involved the development of a Computer-Based Resource Unit by a group of 30 pre-service juniors. Immediate feedback data indicates that participants endorsed this procedure as a valuable teacher preparation experience which should be incorporated as a formal class.

as expertise in identifying concepts and resource materials. Moreover, teacher "developers" must address themselves to a wide variety of student variables such as interests, mental age, reading level, etc. when they are involved in the coding phase of unit development. This latter process necessitates consideration of the particular type of student for which a material or an activity is appropriate. As a result the teacher becomes more aware of individual pupil differences and increasingly expert in strategies to accommodate for them.

APPENDIX A

EVALUATION FORMS RECEIVED FROM OCTOBER 1970 TO JULY 1971

(This summary indicates: the number of teachers who responded to each question; the number of teachers who responded to each component of each question; percentage equivalents. A more extensive summary of subjective reactions and conclusion is being prepared.)

QUESTIONNAIRE

TITLE OF UNIT USED _____

TYPE OF CLASSROOM: (Check one of the below)

330 (89%) Educable MR 116 (35%) Trainable MR 39 (12%) Learning Disability 58 (18%) Phys. Hand 18 (5%) Other 99 (30%)

343 (98%) 1. The CBRU aided me in planning instruction for the students I teach:
- Extensively 133 (38%)
- Moderately 170 (50%)
- Very Little 31 (9%)
- Not at all 9 (3%)

351 (95%) 2. The objectives stated in this unit, in relation to the students I teach were:
- Mostly appropriate 189 (54%)
- Moderately appropriate 145 (41%)
- Mostly inappropriate 17 (5%)

352 (95%) 3. The activities described in the unit, in relation to the objectives were:
- Mostly appropriate 212 (60%)
- Moderately appropriate 122 (35%)
- Mostly inappropriate 18 (5%)

348 (94%) 4. The activities described in the unit, in relation to the students I teach were:
- Mostly appropriate 167 (48%)
- Moderately appropriate 149 (43%)
- Mostly inappropriate 32 (9%)

353 (96%) 5. The CBRU contained:
- Many ideas that were new to me 81 (23%)
- Some ideas that were new to me 216 (61%)
- Very few ideas that were new to me 50 (14%)
- No ideas that were new to me 6 (2%)

6. The use of the CBRU in my instructional planning stimulated my thinking toward new ideas:
   Greatly 137(39%)
   Moderately 171 (49%)
   Very little 39 (11%)
   Not at all 5 (1%)

315 (85%) 7. The resource materials listed in the unit were:
   Very appropriate to the objectives and activities 188 (60%)
   Moderately appropriate to the objectives and activities 123 (39%)
   Had little relationship to the objectives and activities 4 (1%)

309 (83%) 8. The resource materials listed in the unit were:
   Easily obtained 162 (52%)
   Mostly unavailable to me 147 (48%)

482 9. The section of the CBRU that was most useful to me was:
   Content 54 (11%)
   Listing of objectives 97 (20%)
   Listing of activities 215 (45%)
   Listing of materials 87 (18%)
   Measuring devices 29 (6%)

331 10. If I could modify the CBRUs, I would change the section dealing with:
   Content 33 (10%)
   Objectives 39 (12%)
   Activities 59 (18%)
   Materials 37 (11%)
   Measuring devices 27 (8%)
   Would not change at all 136 (41%)

339 11. As a result of using CBRU, it was possible to provide more individual objectives, activities and materials.
   Yes 297 (88%)
   No 42 (12%)

339 12. I would use the CBRU again:
   Yes 313 (92%)
   No 26 (8%)

COMMENTS:

EVALUATION FORM COMPUTER BASED RESOURCE GUIDE

THE CONTINUED IMPROVEMENT OF COMPUTER BASED RESOURCE UNITS DEPENDS TO A GREAT EXTENT UPON YOUR ASSESSMENT OF THE PRINT-OUT YOU HAVE RECEIVED. YOUR RESPONSES TO THE FOLLOWING STATEMENTS SHOULD TAKE ONLY A FEW MINUTES TO COMPLETE. OF PARTICULAR CONCERN ARE YOUR WRITTEN RESPONSES WHICH ARE SOLICITED IN SEVERAL OF THE ITEMS.

TITLE OF UNIT USED----------

AVERAGE AGE OF CHILDREN IN CLASS----------

HAVE YOU PREVIOUSLY USED A COMPUTER BASED RESOURCE GUIDE YES---- NO----

THE CLASS CONSISTED OF PREDOMINATELY TYPICAL CHILDREN--- ATYPICAL CHILDREN----
IF ATYPICAL, PLEASE SPECIFY (E.G. TRAINABLE M.R., PHYSICALLY HANDICAPPED).

PLEASE CIRCLE THE APPROPRIATE NUMBER.

	GREATLY	MODERATELY	VERY LITTLE	NOT AT ALL
1. THE COMPUTER BASED RESOURCE GUIDE AIDED ME IN PLANNING INSTRUCTIONS FOR THE STUDENTS I TEACH	4	3	2	1
2. THE USE OF THIS COMPUTER BASED RESOURCE GUIDE STIMULATED MY THINKING REGARDING NEW TECHNIQUES AND MATERIALS	4	3	2	1
3. TO WHAT EXTENT DID THE USE OF THE COMPUTER BASED RESOURCE GUIDE FACILITATE THE INDIVIDUALIZATION OF INSTRUCTION IN YOUR CLASSROOM	4	3	2	1
4. TO WHAT EXTENT DID YOUR STUDENTS REACT FAVORABLY TO THE USE OF THIS COMPUTER BASED RESOURCE GUIDE	4	3	2	1
5-10. INDICATE FOR EACH OF THE COMPONENTS LISTED BELOW ITS USEFULNESS IN PLANNING AND IMPLEMENTING INSTRUCTIONAL STRATEGIES FOR YOUR STUDENTS .				
A. OBJECTIVES	4	3	2	1
B. CONTENT	4	3	2	1

C. GROUP ACTIVITIES 4 3 2 1

D. INDIVIDUAL ACTIVITIES 4 3 2 1

E. MATERIALS 4 3 2 1

F. MEASURING DEVICES 4 3 2 1

11. DO YOU PLAN TO USE COMPUTER BASED RESOURCE GUIDES IN THE FUTURE
YES---- NO----

12. THE SECTION OF THE GUIDE MOST VALUABLE WAS TOTAL GROUP SUGGESTIONS----
INDIVIDUAL SUGGESTIONS---- NEITHER---- BOTH OF EQUAL VALUE----.

13. INDICATE THE NUMBER(S) OF ANY STATEMENTS YOU FOUND EXCEPTIONALLY HELPFUL
(E.G. MATERIAL =136, ACTIVITY =17).

14. INDICATE THE NUMBER(S) OF ANY STATEMENTS YOU FOUND TO BE TOTALLY
INAPPROPRIATE OR ERRONEOUS. (PLEASE CLARIFY.)

15. WHAT OTHER TOPICS WOULD YOU LIKE TO SEE IN THE FORM OF A COMPUTER BASED
RESOURCE UNIT

16. INDICATE ANY ADDITIONAL INFORMATION WHICH WE MIGHT FIND USEFUL IN IMPROVING COMPUTER BASED RESOURCE UNITS AND/OR ELABORATE ON ANY OF YOUR PREVIOUS ANSWERS. ALSO INDICATE ANY VALUABLE MATERIALS, ACTIVITIES, OR MEASURING DEVICES WHICH YOU UTILIZED WHICH WERE NOT IN THE GUIDE. (PLEASE USE THE BACK OF THIS PAPER.)

17.a HOW LONG AFTER YOU PLACED YOUR ORDER DID YOU RECEIVE YOUR GUIDE?_____

b WAS THIS DELIVERY TIME SATISFACTORY? YES___ NO___

c IF DELIVERY TIME WAS UNSATISFACTORY, WHAT MAXIMUM DELIVERY TIME WOULD BE SATISFACTORY?
_____

IF YOU WISH YOU MAY SIGN YOUR NAME

NAME _____

ADDRESS _____

_____

_____

DATE _____

RETURN TO:
STATE UNIVERSITY COLLEGE AT BUFFALO
RESEARCH AND DEVELOPMENT COMPLEX
1300 ELMWOOD AVENUE
BUFFALO, NEW YORK 14222
ATTENTION: G. BIANCHI

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